



Gap Analysis Of Knowledge And Practice Of Standard Precautions Among Staff Nurses Working In Selected Rural Hospitals (RH) Of Selected Districts, West Bengal.

¹Ranjana Pal, ²Aayushi Mahat

¹Associate Professor, ²Associate Professor

¹Community Health Nursing Department

¹Anandaloke Institute of Nursing Education, Siliguri, West Bengal, India

Abstract: A descriptive study was conducted on gap analysis of knowledge and practice of standard precautions among staff nurses working in rural hospitals of West Bengal. The objectives of the study were to assess knowledge and practice of staff nurses, to find out the correlation between knowledge and practice, to analyse the gap between actual knowledge and practice with desired knowledge and practice, to determine the association between knowledge and practice with selected demographic variables. The conceptual framework adopted for the study was based on general system theory. Forty staff nurses were selected by convenient sampling technique. Data were collected by using structured knowledge questionnaire and observational checklist. The reliability of knowledge questionnaire was established by split half techniques followed by Spearman Brown Prophecy formula and rater-interrater method was used for observation checklist on the basis of agreement and disagreement percentage. Descriptive and inferential statistice were used for data analysis. The findings revealed that there was high gap on knowledge and practice among staff nurses. There was statistically significant relationship between knowledge score and years of working experience [$df(n-2), p < 0.05^*$] and knowledge score and professional qualification [$x^2 df(1) = 3.841, p < 0.05^*$]. The findings have several implications on nursing education, administration, practice and research. The study can be replicated in large population.

Index Terms- Gap analysis, Standard Precautions, Staff nurses, Rural hospital.

INTRODUCTION

Good health depends in a part of safe environment. Practices or techniques that control or prevent transmission of infection help to protect client and health care workers from disease. Clients in all health care setting are at risk for acquiring infections because of low resistance to infectious microorganism, increased exposure to numerous numbers and types of diseases and invasive procedures. By practicing infection prevention and control techniques, the nurse can avoid spreading microorganisms to clients.[1] Health care professionals and particularly nurses are often exposed to microorganisms, many of which can cause serious or even lethal infections. In 1996, the Centre for Disease Control and Prevention (CDC) issued the Standard Precautions, a set of guidelines to prevent exposure, but unfortunately, despite the simplicity and clarity of these guidelines, compliance among nurses is reported low. Although high incidence of occupational exposure to microorganisms is observed among all health care professionals, nurses are among those who are more highly exposed.[2]

Harmful microorganisms can be transferred to hands from contaminated surfaces people come into contact in daily life. Contaminated hands can transmit disease to one self as well as to others. A study was done to determine the extent to which hand hygiene practices and toilet door knobs contribute to the bacterial load of hands of toilet users in a medical school. Only 66.7% claimed they washed hands with soap. Significantly more females (83%) used soap to wash hands compared to males (50%). Bacterial load in the hands of both males and females showed an increase after toilet use. The increase was significant among male students. The dominant hand had a significantly higher bacterial load than the other.[3]

Hospital acquired infections have been recognized as a critical problem affecting patient care. Factors such as inadequate knowledge of hand washing techniques, long nails, wearing of rings and water related problems affect the practice of hand washing. [4]

Hand hygiene is recognized as the leading measure to prevent cross-transmission of microorganisms. Regarding hospital acquired infections, the compliance of nurses with hand washing guidelines seems to be vital in preventing the disease transmission among patients. There is a paucity of studies exploring this subject in Asia. Especially medical and nursing student's knowledge of standard hand hygiene precautions is rarely compared.[5]

NEED OF THE STUDY

Standard precautions refers to the practice, in medicine, of avoiding contact with patient's bodily fluids, by means of the wearing of nonporous articles such as medical gloves, goggles and face shields.[6]

A cross-sectional study was conducted to find out the knowledge, attitude and practice related to standard precautions among the surgeons and physicians. The study shows that they have not well adopted the practice of standard precautions, even by those aware of the standard precaution issues and moderate to low levels of attitude.

Standard precautions reduce the risk of transmission of blood borne infections among patients and health care workers. A study was conducted to assess the awareness and knowledge of standard precautions among nurses in a university teaching hospital. Less than half agreed that standard precautions aimed to protect both health care workers as well as patients. The study highlights a need to implement a programme to improve knowledge on standard precautions.

The risk of transmission of infections in the health care setting has become a matter of increasing concern throughout the world. The adoption of standard precaution practices will minimize the risk of transmission of infections in the health care setting and protect the patients who are being treated and the health care workers who are treating them.

Keeping this point in view the investigator felt the need to analyse the gap on knowledge and practice of standard precautions among the staff nurses.

Problem statement

A study on gap analysis of knowledge and practice of standard precautions among staff nurses working in selected rural hospitals (RH) of selected districts, West Bengal.

Objectives of the study

1. To assess the knowledge of staff nurses on standard precautions.
2. To find out the practices of staff nurses on standard precautions.
3. To find out the correlation between knowledge and practice of staff nurses on standard precautions.
4. To analyse the gap between the actual knowledge on standard precautions among staff nurses and the desired knowledge.
5. To analyse the gap between the actual practice on standard precautions among staff nurses and the desired practice.
6. To determine the association between knowledge of staff nurses on standard precautions with selected demographic variables.
7. To determine the association between practice of staff nurses on standard precautions with selected demographic variables.

OPERATIONAL DEFINITION

Knowledge of standard precaution

It refers to the responses of the participants in relation to standard precautions like hand hygiene, use of personal protective equipment which can be measured through knowledge score by using structured knowledge questionnaire.

Practice of standard precaution

It refers to set of procedures about standard precautions like good hand hygiene, use of personal protective equipment such as face mask, gloves, cap and gown or disposable apron. It can be measured through practice score by using observation checklist.

Gap analysis

It refers to the comparison of actual knowledge of standard precaution with desired knowledge on standard precautions and actual practice of standard precaution with desired practice of standard precautions.

Staff nurse

It refers to those who are registered under nursing council and working at labour room, maternity ward in selected rural hospitals.

CONCEPTUAL FRAMEWORK

Conceptual framework for this study is derived from the General System Theory designed by Ludwig von Bertalanffy (1986) which deals with a general science of 'wholeness.' It emphasizes relationships between the whole and the parts and describes how parts function and behave. The peculiarity of open system is that they allow energy, matter, and information to move freely between systems and boundaries. The systems interaction has three components:-Input, Process and Output. [7]

Input- In this present study input refers to all the staff nurses who are working at rural hospitals.

Process- In this present study process includes assessment of knowledge and practice of staff nurses on standard precautions by structured knowledge questionnaire and observational checklist.

Output- Output refers to the expected change in behaviour in the target population. In this study output is the knowledge score, practice score, association between knowledge and practice on standard precautions and association between knowledge and practice with selected demographic variables.

METHODOLOGY

A non-experimental descriptive research design was adopted for this study. The sample of this research study was 400 staff nurses working at labour room, maternity ward in selected rural hospitals of Darjeeling and Jalpaiguri districts of West Bengal through convenience sampling technique. Non-probability convenient sampling technique was used to select the setting. The instrument used to assess the knowledge of standard precautions among the staff nurses was structured knowledge questionnaire and to assess the practice of standard precautions was structured observation checklist.

DATA ANALYSIS

Data was organized, tabulated, and interpreted using descriptive and inferential statistics. Mean, median, standard deviation and mean percentage was used to assess the knowledge and practice score of staff nurses. Correlation-coefficient and chi-square test examined the relationship and association between selected demographic variables.

RESULT

Description of sample characteristics

The data presented in table 1 shows that most of the respondents were between the ages 25-34 years (62.50%), 35-44 years (27.50%), 45-54 years (7.50%) and more than 55 years (2.50%). Regarding years of working experience 42.50% had experience upto 5 years, 32.50% had experience 6-10 years, 10% had experience 11-15 years and 15% had experience of more than 15 years. Most of them (72.50%) were GNM and 27.50% were BSc. Nursing. All of them 100% worked at maternity ward and labour room. Most of them 75% did not receive any training on infection control and did not read any book or journal on infection control whereas only 25% received the training on infection control and they read book and journal on infection control.

Table 1 Frequency and percentage distribution of sample characteristics.

n=400			
Sample	Characteristics	Frequency	Percentage%
Age in years	25-34	250	62.50
	35-44	110	27.50
	45-54	30	7.50
	More than 55	10	2.50
Years of working experience	0-5	170	42.50
	6-10	130	32.50
	11-15	40	10
	More than 15	60	15
Professional Qualification	GNM	290	72.50
	BSc. Nursing	110	27.50
Area of Working	Maternity ward and labour room	400	100
	Others	-	-
Training received on infection control	Yes	100	25
	No	300	75
Book or journal read o infection control	Yes	100	25
	No	300	75

Findings related to knowledge of standard precautions

Figure 1 shows that 12.50% of the staff nurses had very good knowledge, 22.50% of the staff nurses had good knowledge, 22.50% of staff nurses scored fair knowledge and 42.50% staff nurses obtained poor knowledge score.

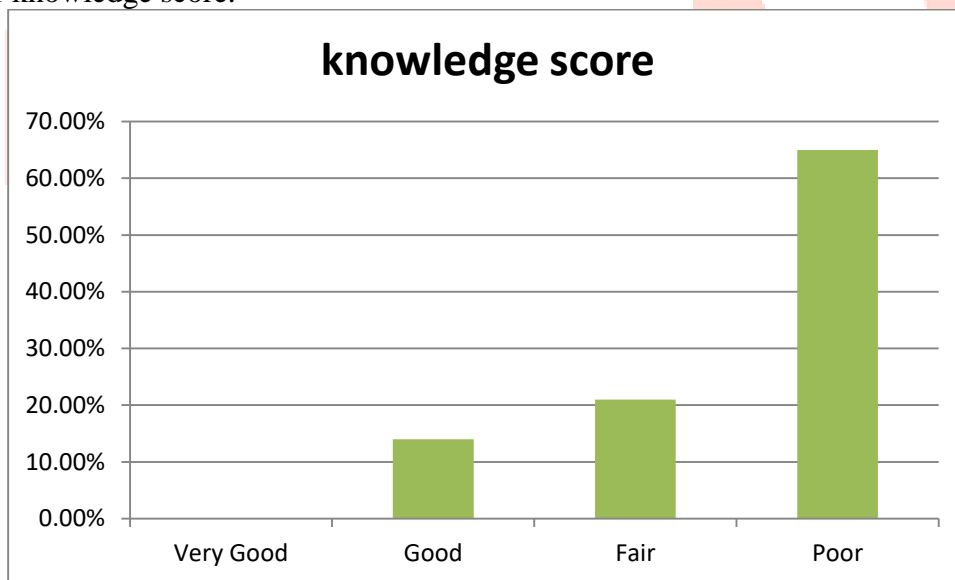


Figure 1 Bar diagram showing percentage distribution of knowledge score of standard precautions.

The data presented in table 2 shows that among two areas of standard precautions 63.55% knowledge score obtained by staff nurses in area of hand washing followed by 57.50% knowledge score in the area of PPE.

Table 2 Area wise mean and mean percentage of knowledge score obtained by staff nurses on standard precautions

N=400			
Area	Maximum possible score	Mean score	Mean percentage (%)
Hand washing	9	5.72	63.55
PPE	6	3.45	57.50

Findings related to practice of standard precautions

Figure 2 shows that 14% of the staff nurses had good practice score, 21% of the staff nurses had fair practice score and 65% staff nurses obtained poor practice score.

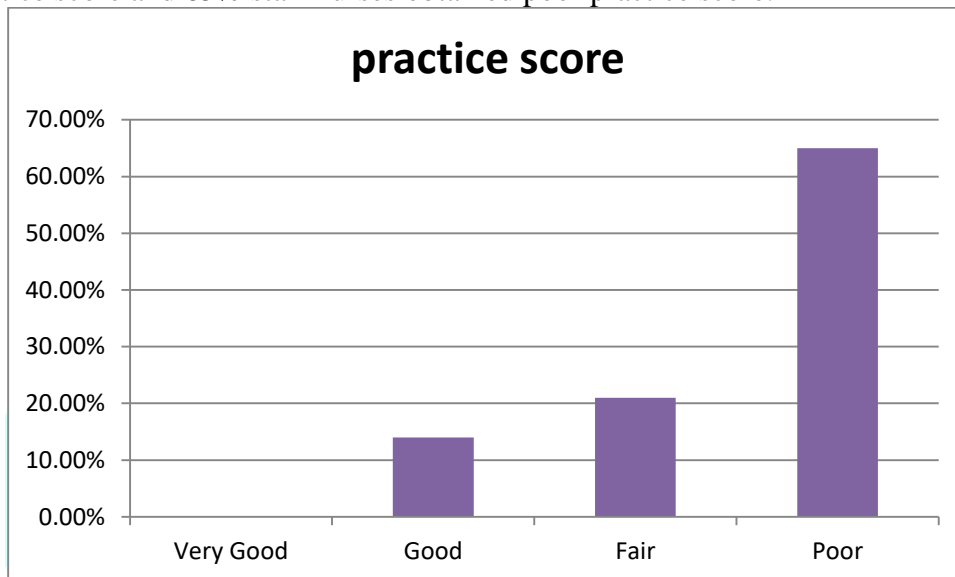


Figure 2 Bar diagram showing percentage distribution of practice score of standard precautions

The data presented in table 3 shows that among two areas of standard precautions 23.955% practice score obtained by staff nurses in area of hand washing followed by 15.99% practice score in the area of PPE.

Table 3 Area wise mean and mean percentage of practice score obtained by staff nurses on standard precautions

N=400			
Area	Maximum possible score	Mean score	Mean percentage (%)
Hand washing	90	21.55	23.95
PPE	149	23.82	15.99

Findings related to relationship between knowledge and practice on standard precautions

The data presented in table 4 shows that calculated r value between knowledge and practice of hand washing was 0.06, and the computed t value was 0.37.

N=400				
Area	Median	SD	r	t
Knowledge	6	1.50	0.06	0.37
Practice	18	9.60		

The data presented in table 5 shows that calculated r value between knowledge and practice of PPE was -0.08, and the computed t value was 0.49.

N=400				
Area	Median	SD	r	t
Knowledge	4	1.23	-0.08	0.49
Practice	17	19.80		

Association between knowledge and practice of standard precaution with demographic variables

Statistically significant association was found between knowledge on standard precaution with professional qualification at $p \leq 0.05$ level of significance. Statistically significant association was found between practice on standard precaution with training received on infection control at $p \leq 0.05$ level of significance.

DISCUSSION

The present study shows that the staff nurses had poor knowledge and practice on standard precautions. The findings are consistent with the previous studies. [8,9,10]

CONCLUSION

The study concluded that poor knowledge and practice on standard precaution was seen among the staff nurses. In-service education and CNE on infection control can be conducted for the staff nurses to improve their knowledge and practice in future. The study can be replicated with a larger sample so that the findings can be generalized to a larger population. The study can be replicated in other states of India.

REFERENCE

1. Sreedharan J, Muttappallymyalil J, Venkatramana M. Knowledge and practice on standard measures in occupational exposure to blood and body fluids among nurses in a university hospital in the United Arab Emirates. *Italian Journal of Public Health*. 2010, August; 7 (1): 90-94. Available from <http://www.ncbi.nlm.nih.gov/pubmed>
2. Centre for disease control and prevention. Work place safety and health topics. 2013. Available from http://en.wikipedia.org/wiki/Blood_borne_disease
3. World Health Organization. Practical guidelines for infection control in health care facilities. Geneva:2012, December, 8.74
4. Alwis WRD, Paririsamy P, San Lw, Xiaofen EC. A study on hand contamination and hand hygiene practices among medical students. *Isrn Public Health*. 2013, Sep, 11; 2(12); 0-5. Available from <http://www.hindawi.com/journals/isrn>
5. Ojong IN, Etim MI, Nlumanze FF, Akpan MI. The practice of hand washing for the prevention of nosocomial infections among nurses in general hospital in Ikot Ekpene, Akwa, Ibom state, Nigeria. 2014, June, 1: 6(1); 97-101. Available from: <http://scholarsresearchlibrary.com/asr>
6. Mehta SH, Vogt SL, Srikrishnan AK, Vasudevan CK, Murugavel KG. Epidemiology of hepatic C virus infection and liver disease among injection drug users in Chennai, India. Department of epidemiology, YR Gationde Centre for AIDS Research and Education (YRGCARE), Chennai, India, 2010, Dec: 706-714. Available from <http://icmr.nic.in>
7. Mukhopadhyaya A. Hepatitis C in India. Department of Gastrointestinal Sciences, CMC vellore, India. 2008, Oct: 465-473. Available from <http://www.ias.ac.in>
8. Nair SS, Hanumantappa R, Hiremath SG, Siraj MA, Raghunath P. Knowledge, attitude and practice of hand hygiene among medical and nursing students at tertiary health care centre in raichur, India. *ISRN Preventive Medicine*. 2014. Available from <http://www.hindwai.com/journas/isrn>
9. Askarian M, Mclaws ML, Meylan M. Knowledge, attitude and practice related to standard precautions of surgeons and physicians in University affiliated hospitals of Shiraz, Iran. *International Journal of Infectious Disease*. www.sciencedirect.com/science/article.
10. Acharya AS, Khandekar J, Sharma A, Tilak HR, Kataria A. Awareness and practice of standard precaution for infection control among nurses in a tertiary care hospital. 2013, Nov-Dec; 104 (6):275-279. Available from <http://www.ncbi.nlm.nih.gov/pubmed>.